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## PLEISTOCENE AND RECENT MOLLUSKS

BY B. SHIMEK

The caustic remarks in the July number of the *Nautilus*, by Mr. F. C. Baker, concerning the writer's references to variations in *Helicina occulta*, made in the April number, call for a rejoinder.

First of all, it is evident that Mr. Baker did not read the writer's paper very carefully. He quotes the statement that "there is no warrant for the separation of (the) modern and fossil forms" as though it applied to *all* pleistocene species. As a matter of fact the reference was specifically to *Helicina occulta*, and the foot-note references apply to this species only. Mr. Baker disconnects the quotation from its context and omits the article "the", thus placing a false construction on it.

His second quotation, that "to separate the living form as a named variety gives an impression of differences which do not exist" is similarly misrepresented. The statement quoted applies specifically to *H. occulta*, and his misinterpretation of it is absurd.

Truly, Mr. Baker appears very much in the light of a Don Quixote fighting an imaginary foe!

So far as *Helicina occulta* is concerned the writer stands by the declaration that there is no warrant for separating the recent and fossil forms, and that any attempt at such separation *does* give "an impression of differences which do not exist."

This statement is based on the study of 4,084 fossil specimens of this species, collected from 225 loess exposures in

seven states, and of 1,400 recent specimens from 20 different localities. Generous additions will be made to both groups from unsorted material on hand, and a detailed paper on the species will be prepared.

Mr. Baker again persists in calling *Pomatiopsis lapidaria* an amphibious species, thus contradicting himself, for in his "Fresh Water Mollusca of Wisconsin" (1928) he says of this species: "Though essentially a terrestrial animal, the gill is of the usual pectinated form as found in the Amnicolidae. Few specimens have been personally collected in water but it has been found in many places under leaves and on damp or wet mud in places more or less subject to overflow from streams or rivers."

The writer has collected this species not infrequently in the past 48 years, and he has yet to find a living specimen in water excepting when washed in temporarily with other terrestrial species during the brief flood periods. If this species is to be called "aquatic" or "amphibious" then we must apply the same term to *Gonyodiscus cronkhitei anthonyi*, its most common associate, and to *Zonitoides arborea*, *Z. minuscula*, *Polygyra multilineata*, and other terrestrial species with which it is usually found.

It really seems that Mr. Baker "has made up his mind" that it is "aquatic" or "amphibious" because of its relationship, "and wishes to 'stand pat'."

With the same persistence he refers to the form which he has described as *Pomatiopsis scalaris* as "aquatic." The writer has collected more than 2000 specimens of this form in 18 loess exposures near New Harmony, Indiana. They were normally distributed in the loess, not drifted, and their most common associates were strictly terrestrial forms, such as *Helicina occulta*, *Polygyra monodon*, *P. hirsuta*, *Helicodiscus parallelus*, *Strobilops*, etc., numbering hundreds of specimens, and no water-forms were found excepting that, after careful search, three of the exposures yielded a few shells (9 all told!) of a small more or less amphibious *Lymnaea* (*Galba*). Surely this does not point to aquatic habits!

As to the validity of *P. scalaris*, which he now maintains so positively, it should be noted that only two years ago (in the Trans. of the Ill. State Acad. of Sci., Vol. XXI, p. 309) he made this statement: "Scalaris is ancestral to *lapidaria* and might perhaps be considered simply a race of that species."

The limits of this paper do not permit a discussion of some of his other "species" and "varieties" from the loess, but these will be taken up in due time.

Throughout his paper Mr. Baker casts reflections on the carefulness and fullness of my observations. Of course this is only surmise on his part and may be another illustration of his characteristic hastiness, but it comes with poor grace from one who has blundered so often in his loess discussions and references. From the very first his advent into this field has been unfortunate. In his "Revision of the Physae of N. E. Illinois" (*Nautilus*, vol. XIV, 1900) he reported a number of species of *Physa* from the loess,—a manifest error; later he referred species of the genera *Pleurocera*, *Goniobasis*, *Vivipara* and *Campeloma* to the same horizon,—another glaring error; he has reported the reference to the Otis Mills, S. Dakota, section as loess, though it is clearly Aftonian; and other illustrations of his lack of understanding of the horizons from which the fossils were derived could be cited. It should, moreover, be noted that much of the work which he has published was done with material which he had not studied in the field, but which was submitted by others, often in small quantities.

Mr. Baker seems to think that the writer's objection is to the recognition of varieties. As a matter of fact varietal names are often convenient and necessary, particularly where they are correlated with definite ecological conditions. But too often Mr. Baker assumes conditions for which there is little foundation. Repeatedly in his papers he refers to depauperate shells as evidence of a colder climate during the deposition of the loess, and this attitude is further shown by such names as *gelida* for some of his varieties. He has simply gone back to the conclusion advanced by

McGee and Call in 1882 (Am. Jour. of Sci., 3rd Ser., vol. XXIV), at a time when geologists still accepted the aqueous theory of loess origin, in the following words:

“In such a basin the loëss was deposited, just as was all that of eastern Iowa, the coldness of the waters and the low temperature of the air being attested by the depauperate shells found imbedded in it.”

Of course Mr. Baker has no more evidence of a colder loess-climate than was possessed by McGee and Call. Some of his “evidence” is decidedly weak, as, for example, when he refers to *Vallonia gracilicosta* as evidence of a cooler climate, for this species is one of the most common land snails living in the prairie groves and border areas in Iowa.

As to the depauperation of certain species, if Mr. Baker would make a wider study of both the loess and modern faunas he would find that such depauperation (notable also in living forms) as is evident can be explained better on the score of periodic comparative drouth rather than of cold. It is evident that he has been influenced by contact with physical geologists (as Call was 48 years ago), some of whom have been making desperate efforts to connect the deposition of loess closely with glacial conditions.

There is much variation in both modern and fossil faunas, but the two groups blend in such manner that any attempt to represent marked changes is extremely unfortunate and misleading. Mr. Baker is making this attempt both by representing that well-marked forms have become extinct, and by the application of such names as *pleistocenica*, *yarmouthensis*, etc., without giving due heed to the variations in modern and fossil faunas.

The writer has no objection to Mr. Baker's playing with minor variations and applying names to express them, excepting that this will doubtless clutter up the synonymy, —a favorite pastime with some of our ultra-modern students of shells. More than that, the writer welcomes any new name of species or variety which expresses something definite, but he desires to enter an emphatic protest against the application of names which not only do not correctly

express an actual state or condition, but which are positively misleading.

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FORMER AND PRESENT TERMS USED IN DESCRIBING  
FRESH-WATER MUSSELS

BY WILLIAM B. MARSHALL  
U. S. National Museum

Having occasion to translate Brugière's descriptions of two fresh-water mussels from French Guiana, viz.: The genus *Anodontites*<sup>1</sup> and the species *Anodontites crispata*<sup>1</sup> and "*Unio granosa*"<sup>2</sup> (*Diplodon granosus*), I became interested in the terms he applied to various features. Some of his terms are exactly the opposite to what they should be and others are inaccurate. These remarks are not to be taken as a criticism of Brugière's work, which was excellent for its day, but rather as indicating the difficulties attending the early steps in the study of mollusks, due to lack of even the most elementary knowledge concerning them.

<sup>1</sup> Journ. Hist. Nat. Paris, I. p. 131, 1792.

<sup>2</sup> Loc. cit. p. 107.

English equivalents for terms used by Brugière in his descriptions.	Terms for the same now in use and substituted in the translation.
Length	=height.
Breadth	=length.
Transverse striae	=concentric striae.
Longitudinal striae	=radiating striae.
Anterior	=posterior.
Posterior	=anterior.
Summit	=beak or umbo.
Muscular attachment	=muscle scar.

The early use of "anterior" for what we know to be posterior end, and of "posterior" for what we know to be anterior, was probably founded upon supposition instead of upon anatomical knowledge. It may have been supposed that in going into the sand or mud the animal would back